

What is claimed is:

1. A method of compensating for lost packets in a packet based voice communication system, comprising the steps of:

- 5 storing successive packets of a packetized voice signal;
- 10 detecting a missing voice packet from said voice signal;
- 15 estimating the power spectrum $P(\omega)$ of a stored one of said packets previous to said missing voice packet;
- creating a filter with transfer function $|H(\omega)|^2 = P(\omega)$;
- 20 applying white noise to said filter for generating a noise packet which has the same power spectrum as said stored one of said packets; and
- inserting said noise packet in said voice signal to replace said missing voice packet.

- 25 2. The method of claim 1, wherein said step of estimating said power spectrum comprises performing Welch's averaged periodogram method on said stored one of said packets.

- 30 3. A system to compensate for lost packets in a packet based voice communication system, comprising:

- a buffer for storing successive packets of a packetized voice signal;
- a packet loss detector for detecting a missing voice packet from said voice signal;
- a power spectrum estimator for estimating the power spectrum $P(\omega)$ of a stored one of said packets previous to said missing voice packet;

a filter coefficients generator for receiving said power spectrum from said power spectrum estimator and in response creating a filter with transfer function $|H(\omega)|^2 = P(\omega)$;

- 5 a white noise generator for applying white noise to said filter which in response generates a noise packet which has the same power spectrum as said stored one of said packets; and

10 a switch operable by packet loss detector for inserting said noise packet in said voice signal to replace said missing voice packet.

- 10 4. The system of claim 3, further comprising an additional switch operable by said packet loss detector and connected between said buffer and said power spectrum estimator.

- 15 5. The system of claim 3, wherein said power spectrum estimator implements Welch's averaged periodogram method on said stored one of said packets.